

## What Is a Fair Tax?

Almost everyone is concerned about how much we pay in taxes. The best way to determine how much tax you pay is to state your tax as an *effective tax rate*. An effective tax rate is the percentage of your income you pay in taxes. This differs from a *nominal tax rate* or *legal tax rate*. For example, a sales tax rate may be 5 percent (the nominal rate), but this does not mean that all people pay 5 percent of their income in sales taxes. Outlays for rent, insurance, and medical bills, among other things, may not be subject to sales taxes. Neither, of course, are savings.

Let's look at the effective tax rate of Joanne Walters. If she made \$30,000 a year and paid \$6,000 in taxes, her effective tax rate would be 20 percent. You can figure this by dividing \$6,000 by \$30,000:

$$\frac{\$6,000}{\$30,000} = 20\%.$$

There are three kinds of effective tax rates. If a tax is *progressive*, the effective tax rate increases as a person's income goes up. For example, a person who makes \$30,000 a year may have an effective tax rate of 10 percent, while a person who makes \$45,000 a year may have an effective rate of 18 percent.

If a tax is *proportional*, the effective tax rate stays the same regardless of income. In this case, a person making \$30,000 a year and a person making \$45,000 a year would both be taxed at an effective rate of, say, 10 percent. Of course, the person making \$45,000 a year would pay more total dollars in taxes. A proportional tax is sometimes called a *flat tax*.

If a tax is *regressive*, the effective tax rate decreases as income goes up. For example, a person making \$30,000 a year might pay an effective tax rate of 10 percent, while a person who makes \$45,000 a year might pay an effective tax rate of 8 percent.

Now answer these questions to see if you understand progressive, proportional, and regressive tax rates.

1. A tax that requires each person to pay 3 percent of income regardless of the level of income is a \_\_\_\_\_ tax.
2. A tax levied at 1 percent on the first \$1,000 of income, 2 percent on the next \$1,000, and so on is a \_\_\_\_\_ tax.
3. A tax levied at 15 percent on the first \$1,000 of income, 12 percent on the next \$1,000, and so on is a \_\_\_\_\_ tax.

4. If it is true that a person with an income of \$20,000 a year typically buys 10 gallons of gasoline per week and a person with an income of \$40,000 typically buys 15 gallons of gasoline per week, this suggests that an excise tax of 40 cents per gallon would be a \_\_\_\_\_ tax. Explain.
5. Rick Morales has an income of \$50,000 but spends only \$40,000 on taxable goods. Chet Burton has an income of \$25,000 and spends it all on taxable goods. Assuming an 8 percent sales tax, Mr. Morales will pay \$\_\_\_\_\_ in sales taxes, which is \_\_\_\_\_ percent of his total income. On the other hand, Mr. Burton will pay \$\_\_\_\_\_ in sales taxes, which is \_\_\_\_\_ percent of his total income. Therefore, we can conclude that the sales tax is (*progressive / proportional / regressive*).
6. Since the sales tax has the same nominal or legal rate based on sales, why is it regressive? What steps could be taken to make it less regressive?
7. Suppose that the government runs a pension fund to which all workers must contribute. The employee contribution rate is 6.2 percent on the first \$84,900 of income. All income in excess of \$84,900 is not taxed for pension purposes.
- (A) What is the effective pension tax rate for a person earning \$20,000 a year? \_\_\_\_\_
- (B) What is the effective pension tax rate for a person earning \$84,900? \_\_\_\_\_
- (C) What is the effective pension tax rate for a person earning \$169,800? \_\_\_\_\_
- (D) Therefore, the pension tax is a (*progressive / proportional / regressive*) tax up to \$84,900 of income. For incomes above \$\_\_\_\_\_, the tax is (*progressive / proportional / regressive*).
- (E) In addition to the pension tax, assume people must pay 1.45 percent of their income for medical benefits. There is no income limit on the medical care tax. Does this make the total tax for pension and medical care more or less regressive? Why?

## Who Pays the Income Tax?

Who actually pays the income tax? Do “the rich” escape paying their “fair” share of taxes? Is most of the income tax paid by middle-income people? Who are the rich? These questions are important for several reasons:

- Taxes can redistribute income. Like Robin Hood, government can tax the rich and redistribute this money to the poor. Instead of money, most tax revenue is redistributed in the form of college scholarships, food stamps, medical care, housing assistance, and other services for lower-income families. While the merits of these programs can be debated, almost no one would agree that a “Robin Hood in reverse” policy would be beneficial: taxing the poor and redistributing tax revenue to the wealthy.
- Some people think taxes should have *vertical equity*, that is, the tax burden should be distributed fairly across people according to their ability to pay. This argument for progressive taxation maintains that the rich have more ability to pay taxes, and therefore should bear a larger tax burden than low-income families.
- Some people think that income should be distributed more equally than it is today.

### Part A: Examining the Tax Data

Tables 5-6.1 and 5-6.2 contain information regarding shares of income, taxes, and tax rates for federal income tax returns for 1997 and 2009. Use the tables to answer the questions that follow.



Table 5-6.1

#### Federal Income Tax Return Data: 2009

| Percent of all taxpayers | Income range    | Group's share of total income (adjusted gross income) | Group's share of total income taxes | Group's average tax rate |
|--------------------------|-----------------|---|-------------------------------------|--------------------------|
| Top 1%                   | Above \$343,927 | 16.9%   | 36.7%                               | 24.0%                    |
| Top 5%                   | Above \$154,643 | 31.7%   | 58.7%                               | 20.5%                    |
| Top 10%                  | Above \$112,124 | 43.2%   | 70.5%                               | 18.1%                    |
| Top 25%                  | Above \$66,193  | 65.8%   | 87.3%                               | 14.7%                    |
| Top 50%                  | Above \$32,396  | 86.5%   | 97.7%                               | 12.5%                    |
| Bottom 50%               | Below \$32,396  | 13.5%   | 2.3%                                | 1.8%                     |
| All taxpayers            |                 | 100.0%  | 100.0%                              | 11.1%                    |

Source: Tax Foundation



Table 5-6.2

**Federal Income Tax Return Data: 1997**

| Percent of all taxpayers | Income range    | Group's share of total income (adjusted gross income) | Group's share of total income taxes | Group's average tax rate |
|--------------------------|-----------------|---|-------------------------------------|--------------------------|
| Top 1%                   | Above \$250,736 | 17.4%   | 33.2%                               | 27.6%                    |
| Top 5%                   | Above \$108,048 | 31.8%   | 51.9%                               | 23.6%                    |
| Top 10%                  | Above \$79,212  | 42.8%   | 63.2%                               | 21.4%                    |
| Top 25%                  | Above \$48,173  | 65.0%   | 81.7%                               | 18.2%                    |
| Top 50%                  | Above \$24,393  | 86.2%   | 95.7%                               | 16.1%                    |
| Bottom 50%               | Below \$24,393  | 13.8%   | 4.3%                                | 4.5%                     |
| All taxpayers            |                 | 100.0%  | 100.0%                              | 14.5%                    |

Source: Tax Foundation

- Suppose you define "the rich" as the top 10 percent of all income earners. In 2009, what was the minimum income you had to earn to be "rich"?
- What percentage of total income taxes did the top 1 percent of income earners pay in 2009?
- In 2009, what percentage of total income taxes was paid by the bottom half of all income earners?
- In 2009, the average U.S. taxpayer paid 11.1 percent of his/her income in taxes. Based on the information in the table, would you classify the U.S. income tax system as progressive, proportional, or regressive? Why?

5. Compare 1997 with 2009. What is the best description of what happened to the income tax burden in the United States over this 12-year period?

### Part B: Equity Questions

Many people are concerned that “the rich are getting richer and the poor are getting poorer.” Using the income tax data from Tables 5-6.1 and 5-6.2, answer the following questions.

6. Is there evidence that the rich got richer and the poor got poorer between 1997 and 2009? Explain.
7. Some politicians argue that the wealthy are not paying their “fair” share of taxes. Based on the data in the two tables, do you agree or disagree? Explain.
8. Would you argue that the U.S. income tax system promotes or hinders greater income equality? Why?

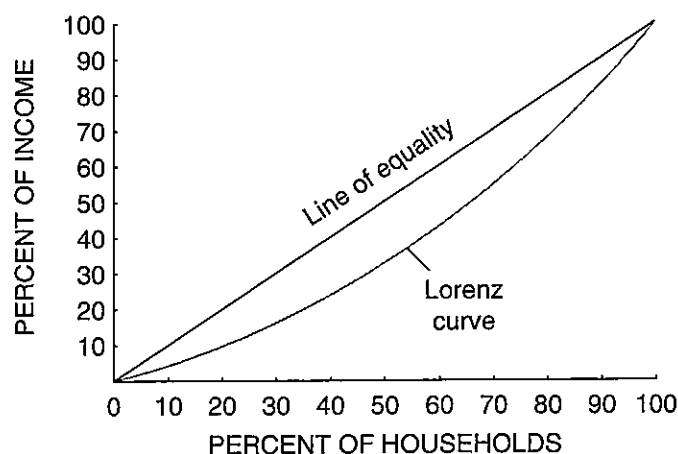
## The Lorenz Curve and Gini Coefficient

The labor markets often fail to allocate income equally. Some households earn much income while many more earn little income. Differences in worker productivity, varying trade patterns, patterns of past discrimination, and tax policies are some of the reasons for what economists call *income inequality*. For example, increased demand for workers with at least bachelor's degrees and decreased demand for workers with only high school diplomas have resulted in income inequality as college-educated laborers' income has risen and high school-educated laborers' income has fallen.

Two important measures of income inequality are the Lorenz curve and the Gini coefficient. The *Lorenz curve* is a graph of income inequality that shows what percentage of a country's income is being earned by a percentage of the country's households.



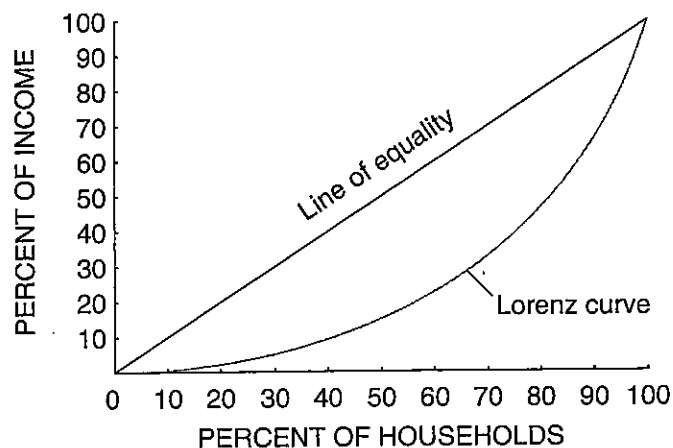
Figure 5-7.1  
Lorenz Curve #1



In Figure 5-7.1, the line of equality represents a perfectly even distribution of income. A perfectly even distribution means that 10 percent of the households earn 10 percent of the income, 20 percent of the households earn 20 percent of the income, and so on. The Lorenz curve shows the actual distribution of income. The closer the Lorenz curve is to the line of equality, the more evenly distributed is the income. The more the Lorenz curve sags away from the line of equality, then the more unevenly income is distributed. Figure 5-7.2 shows more income inequality than Figure 5-7.1.



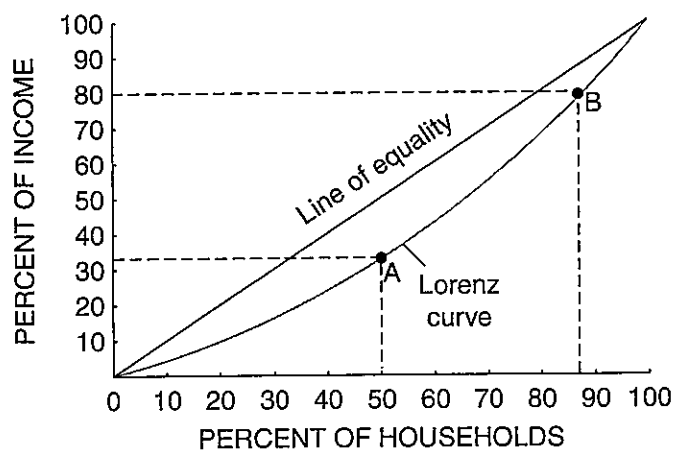
Figure 5-7.2  
Lorenz Curve #2



1. In Figure 5-7.3, determine the amount of income that is being earned by 50 percent of the households in the country of Maxopia.



Figure 5-7.3  
Lorenz Curve for the Country of Maxopia



2. Now, determine the percentage of income being earned by 88 percent of the households.

3. Using Figure 5-7.4, determine the percentage of income being earned by 50 percent of the households and then by 88 percent of the households in the country of Minopia. You may want to use a ruler to help you.

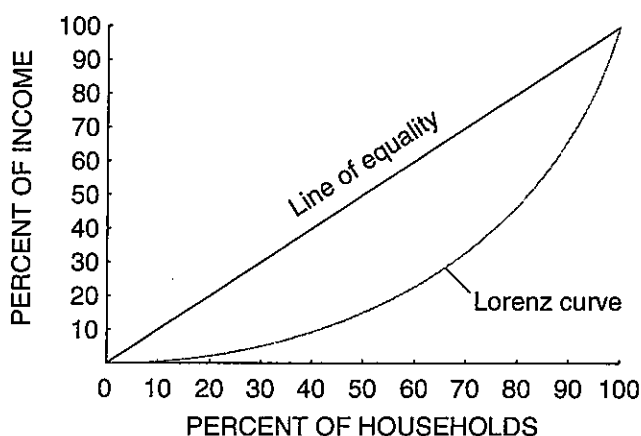
(A) 50 percent of households earn \_\_\_\_\_ of the income.

(B) 88 percent of households earn \_\_\_\_\_ of the income.



Figure 5-7.4

**Lorenz Curve for the Country of Minopia**



4. Compare your results from Questions 1 and 2 with your results from Questions 3A and 3B. Which country has more income equality—Maxopia or Minopia?